

Abstract

In a reverse vending apparatus for detecting containers, e.g., bottles of glass or plastic, or packaging made of metal, wood, glass or plastic which for the recycling of materials or reuse of the container are inserted in the machine and conveyed past a detector station containing a video camera, a video image analyser (125, 130) is connected to the video camera in order to analyse the video image whilst the container (B) is conveyed in lying position and with its axis parallel to the direction of transport past the video camera (109). The video analyser (125) contains a calculator component (130) for determining, when the container moves into the video image, whether the container enters the detection zone (video image) mouth (B1) (e.g., top portion or neck of bottle) (Fig. 3b) first or bottom (B2) (Fig. 3c) first, and a control component (130) which causes the container to be fed back to a container insertion portion of the apparatus if the container comes mouth first, and which has a signalling means for signalling to the apparatus user to turn the container (B) so that it is inserted bottom first when reinserted, or causes the container to be fed on to a discharge station if it comes bottom first. The analyser may moreover contain one or more of the following pieces of supplementary equipment: a container position detector (131), a container shape calculation circuit (132), a colour determination circuit (133), a "best analysis image" circuit (136), a bar code reader (134) and a detector (138) for determining whether the container contains residual liquid or another substance.

Figs. 2, 3b 3c